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More suitable criteria was needed to evaluate "mature" students or those over 21 who had not completed all senior matriculation requirements for admission to the University of Lethbridge. This study was designed to compare the performance of "mature" students and several groups of regularly admitted freshmen on the College Qualification Test (CQT) and on the fall, spring, and accumulative grade point average. Freshmen were grouped into five subgroups, based on examination results. Findings included: (1) the mature students had the lowest mean scores on four of the five CQT subtests, and (2) the mature students had the highest fall grade point average (GPA), the second highest spring GPA, and the highest accumulative GPA of the five groups. It appears that the mature student's higher GPA was due to their superior maturity and motivation. While the sample was too small for broad generalizations, one wonders whether the CQT can adequately predict the success of mature students with university work. Cook and others' research are cited in support of these conclusions. Data tables are included throughout this report. (Author/KJ)

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AN EXAMINATION OF FIVE DIFFERENT GROUPS OF FIRST YEAR STUDENTS AT THE UNIVERSITY OF LETHBRIDGE ON THE COLLEGE QUALIFICATION TEST AND GRADE POINT AVERAGE 1967-68.

by

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UNIVERSITY OF LETHBRIDGE

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INTRODUCTION

When the University of Lethbridge began its first academic year in September, 1967, it had no results or norms on standardized tests to indicate the level of performance of freshmen students who were being admitted to university. Students were admitted on the basis of their performance on an external examination (senior matriculation) written at the conclusion of high school. This is the custom in most provinces of Canada.

Another admission matter of concern to university officials was the need to have more suitable criteria from which to admit mature students - a special admissions category at the University of Lethbridge. A "mature student" for admission purposes is a student 21 years of age or over, who has not completed all of the senior matriculation requirements and in some instances dropped out of school before reaching grade twelve. Because of the exigencies of the situation, (first year of operation of an instant university) twenty-three mature students were admitted in September, 1967, on the basis of an interview with the author, their previous school record, their work experience, and a recommendation from their employer, principals or teachers attesting to their ability to profit from university work.

It was felt that as the mature student plan became more widely known an ever increasing number of people would make application to be admitted under this policy. This was confirmed in the fall of

1968 when approximately sixty mature students were admitted to the University of Lethbridge. A more objective evaluation of students was needed, therefore, in order to be able to make predictive correlation with grade point averages and to do a more effective job of screening applicants.

Further, it was extremely desirable to compare the general academic performance level of the mature student upon admittance with that of the typical freshman who had just graduated from high school. It was considered even more important, however, to follow the mature students and compare their actual performance (GPA) with those of other freshmen.

Purpose

It was the purpose of this study to compare the performance of mature students and several groups of regularly admitted freshmen on the College Qualification Test and on the Fall, Spring, and Accumulative grade point average.

PROCEDURE

Since the freshmen who were entering university direct from high school had varying degrees of proficiency on the external examination (senior matriculation), particularly as to the number of subjects written and passed, it was decided to categorize the students accordingly.

Consequently, as shown in each of the tables where all the groups are compared, the following groups were formed:

Group I was comprised of students who had five subjects on senior matriculation exams with an average of 60% or better but failed the sixth subject.

Group II was comprised of students who completed five subjects on the senior matriculation with an average of 60%+ but had passed the sixth (50% to 59%).

Group III was comprised of students who had six subjects with an average of 60%+ and wrote 6 to 8 exams to do so.

Group IV was comprised of students who had written five subjects with an average of 60%+ but had to write 9 or more examinations to do so. The average number of exams written by this group was 11, with one student writing 18 exams to obtain an average of 60%+ in five subjects. This group was thought of as the "persisters". The investigator was particularly concerned with how this group compared with the other groups.

Group V was comprised of students (non matriculants) who were admitted on the basis mentioned earlier. It should be pointed out

that the age range for this group was from 21 to 53 years of age. The mean age was 30 years.

Group VI was the total group - all five groups together.

Sample

The sample consisted of 107 first year students subdivided into the five groups mentioned. Originally, a random sample of 25 in each of the first four groups was obtained from the Registrar's Office and there were 23 in the mature student group which would have made a total of 123 students. Since participation in this project was purely voluntary not all of the students wrote the CQT, with the result that the total N was 107 students instead of the intended 123.

Test Used

The College Qualification Test was used in this study because of the flexibility it gave in being able to be administered at the University's convenience and not on the date specified by the publisher. This is particularly important in a sparsely populated area like southern Alberta. When a student travels a considerable distance to inquire about a mature student admission, it is possible for him to take the CQT during that visit and not have to make a second journey to write the test. This is an especially desirable feature in winter when the temperature is subzero.

The College Qualification Test is published by the Psychological Corporation, New York. It was normed in 1956 on 22,000 freshmen college students. It is an objective multiple choice type test. The several subtests include: 1) Verbal which takes 15 minutes and consists primarily of antonyms and synonyms, 2) N or mathematics which

takes 35 minutes and includes general arithmetic and elementary algebra, and 3) Information which takes 30 minutes and can be subdivided into science and social studies. The total test time, then, is 80 minutes and the total possible test score 200 subdivided down as follows: Verbal 75, Math 50, Information 75 with Social Studies being 37 and Science 38.

Administering the Test

The students participating in this study were asked to report to the University on a Saturday early in the fall semester specifically to write the CQT. Approximately two thirds of the sample reported at the place and time requested. The students in the remaining third of the sample were contacted individually and tested at the Counselling Center individually or in small groups.

ANALYSIS OF DATA

The analysis of variance summaries are presented in this section as well as the means, standard deviations and where appropriate, Duncan's Multiple Range Test of pertinent data.

Table I indicates an F-ratio difference among the groups at the .01 level of significance with respect to responses on the CQT Verbal subtest. Group V, the mature students, had a mean score of 60.78 which was a significantly higher score than 49.04, the mean score for Group IV, the "persisters". There was no significant difference, however, between the score received by the mature students and those in Groups I, II, and III on the verbal subtest. Also, there was no significant difference between the score received by the "persisters", Group IV, and those students in Groups I, II, and III as the results of Duncan Multiple Range Test show.

See Table I - page 7

The analysis of variance summary in Table II shows a large F-ratio which in turn demonstrates a significance at the .01 level among the groups on the CQT math subtest. Group III had a mean score of 45.50 which was significantly

her than the mean score of Groups I, IV, and V but not significantly different

Group II. There was no difference between Groups I, II, and IV. Group V,

ture students, with a score of 28.78 indicated a significantly lower achieve-

in mathematics than any other group. Since many of these mature students had

ttended school for several years it was not surprising that their mean score

low. It should be mentioned here that while Group V (mature students) had

lowest mean score on the mathematics subtest, very few students elected a major requiring math as most of them lacked the prerequisite Math 30. (see Table XV)

See Table II - page 8

TABLE I

A COMPARISON OF THE FIVE GROUPS
ON THE CQT VERBAL MEAN SCORE

ANALYSIS OF VARIANCE SUMMARY

	df	Sum of Squares	Mean Square	F-ratio	P
Between Groups	4	1897.15	474.29	4.54	.01*
Within Groups	102	10667.79	104.59		
Total	106	12564.95			

* Significant at the .01 level

MEAN SCORES AND STANDARD DEVIATIONS

Group	I	II	III	IV	V
Sample Size	20	22	22	25	18
Mean	51.20	52.45	57.36	49.04	60.78
Standard Deviation	11.57	10.30	10.21	9.25	9.86

DUNCAN MULTIPLE RANGE TEST

Group	IV	I	II	III	V
Means ranked by size	49.04	51.20	52.45	57.36	60.78

Note: Any two means not underscored by the same line are significantly different at the .01 level.
Any two means underscored by the same line are not significantly different.

Group I 5 subjects 60%+ average, failed sixth
Group II 5 subjects 60%+ average, passed sixth
Group III 6 subjects 60%+ average, wrote 6 to 8 exams
Group IV 5 subjects 60% average, wrote 9 or more - average 11
Group V Mature students - non matriculants

TABLE II

A COMPARISON OF THE FIVE GROUPS
ON THE CQT MATHEMATICS MEAN SCORE

ANALYSIS OF VARIANCE SUMMARY

	df	Sum of Squares	Mean Square	F-ratio	P
Between Groups	4	2895.60	723.90	20.79	.01*
Within Groups	102	3551.31	34.82		
Total	106	6446.92			

* Significant at the .01 level

MEAN SCORES AND STANDARD DEVIATIONS

Group	I	II	III	IV	V
Sample Size	20	22	22	25	18
Mean	38.75	40.95	45.50	39.00	28.78
Standard Deviations	7.25	4.90	3.71	5.23	8.06

DUNCAN MULTIPLE RANGE TEST

Group	V	I	IV	II	III
Means ranked by size	28.78	38.75	39.00	40.95	45.00

Note: Any two means not underscored by the same line are significantly different at the .01 level.
Any two means underscored by the same line are not significanlty different.

Group I	5 subjects 60%+ average, failed sixth
Group II	5 subjects 60%+ average, passed sixth
Group III	6 subjects 60%+ average, wrote 6 to 8 exams
Group IV	5 subjects 60% average, wrote 9 or more - average 11
Group V	Mature students - non matriculants

On the CQT Information Total, a significant difference was found among the groups at .05 level using a one way analysis of variance. The Duncan Multiple Range test indicated there was no significant difference between Groups I, II, IV, and V. Group III was found to have a score significantly higher than Groups I, IV and V, but not significantly different from Group II.

See Table III - page 10

The CQT Science Analysis of variance shows a significance among the groups at the .01 level. There was no significant difference on the Duncan Multiple Range test between Groups I, II, IV and V. Group III was found to have a score significantly higher than Groups I, and V, but not significantly different from Groups II and IV.

See Table IV - page 11

It is interesting to note that of all the CQT subtests, Social Studies in Table V is the only subtest in which there was no significant difference among the groups as shown by the analysis of variance summary. This is further borne out, of course, by the small range among the mean scores.

See Table V - page 12

The analysis of variance summary in Table VI indicates that on the CQT total mean score (an aggregate of all the subtests) there was a significant difference among the groups at the .01 level. On the Duncan Multiple Range test there was no significant difference between Groups I, II, IV and V. While Group III was not significantly different from Group II, it was found to have a significantly higher score than Groups I, IV, and V.

See Table VI - page 13

TABLE III

A COMPARISON OF THE FIVE GROUPS
ON THE CQT INFORMATION TOTAL MEAN SCORE

ANALYSIS OF VARIANCE SUMMARY

	df	Sum of Squares	Mean Square	F-ratio	P
Between Groups	4	718.98	179.74	3.45	.05*
Within Groups	102	5312.21	52.08		
Total	106	6031.19			

* Significant at the .05 level

MEANS AND STANDARD DEVIATIONS

Group	I	II	III	IV	V
Sample Size	20	22	22	25	18
Mean	51.30	55.09	57.86	52.80	50.72
Standard Deviation	7.26	7.02	6.34	7.08	8.50

DUNCAN MULTIPLE RANGE TEST

Group	V	I	IV	II	III
Means ranked by size	50.72	51.30	52.80	55.09	57.86

Note: Any two means not underscored by the same line are significantly different at the .05 level.
Any two means underscored by the same line are not significantly different.

Group I — 5 subjects 60%+ average, failed sixth
Group II — 5 subjects 60%+ average, passed sixth
Group III — 6 subjects 60%+ average, wrote 6 to 8 exams
Group IV — 5 subjects 60% averave, wrote 9 or more - average 11
Group V — Mature students - non matriculants

TABLE IV

A COMPARISON OF THE FIVE GROUPS
ON THE CQT SCIENCE MEAN SCORES

ANALYSIS OF VARIANCE SUMMARY

	df	Sum of Squares	Mean Square	F-ratio	P
Between Groups	4	250.25	62.56	3.85	.01*
Within Groups	102	1657.99	16.26		
Total	106	1908.24			

* Significant at the .01 level

MEANS AND STANDARD DEVIATIONS

Group	I	II	III	IV	V
Sample Size	20	22	22	25	18
Mean	27.85	29.77	31.59	28.64	27.17
Standard Deviations	4.50	4.08	3.16	4.17	4.18

DUNCAN MULTIPLE RANGE TEST

Group	V	I	IV	II	III
Means ranked by size	27.17	27.85	28.64	29.77	31.59

Note: Any two means not underscored by the same line are significantly different at the .01 level.
Any two means underscored by the same line are not significantly different.

Group I	5 subjects 60%+ average, failed sixth
Group II	5 subjects 60%+ average, passed sixth
Group III	6 subjects 60%+ average, wrote 6 to 8 exams
Group IV	5 subjects 60% average, wrote 9 or more - average 11
Group V	Mature students - non matriculants

TABLE V

A COMPARISON OF THE FIVE GROUPS
ON THE CQT SOCIAL STUDIES MEAN SCORE

ANALYSIS OF VARIANCE SUMMARY

	df	Sum of Square	Mean Square	F-ratio	P
Between Groups	4	123.83	30.96	1.63	N.S.*
Within Groups	102	1941.89	19.04		
Total	106	2065.71			

* not significant

MEANS AND STANDARD DEVIATIONS

Group	I	II	III	IV	V
Sample Size	20	22	22	25	18
Mean	23.45	25.32	26.27	24.16	23.60
Standard Deviations	3.94	4.19	4.22	3.94	5.59

Group I	5 subjects 60%+ average, failed sixth
Group II	5 subjects 60%+ average, passed sixth
Group III	6 subjects 60%+ average, wrote 6 to 8 exams
Group IV	5 subjects 60% average, wrote 9 or more - average 11
Group V	Mature students - non matriculants

TABLE VI

A COMPARISON OF THE FIVE GROUPS
ON THE CQT TOTAL MEAN SCORES

ANALYSIS OF VARIANCE SUMMARY

	df	Sum of Squares	Mean Square	F-ratio	P
Between Groups	4	6590.13	1647.53	5.30	.01*
Within Groups	102	31690.52	310.69		
Total	106	38280.65			

* significant at the .01 level

MEANS AND STANDARD DEVIATIONS

Group	I	II	III	IV	V
Sample Size	20	22	22	25	18
Mean	141.25	148.50	160.73	140.84	140.28
Standard Deviation	17.37	19.37	16.80	15.73	19.12

DUNCAN MULTIPLE RANGE TEST

Groups	V	IV	I	II	III
Means ranked by size	140.28	140.84	141.25	148.50	160.73

Note: Any two means not underscored by the same line are significantly different at the .01 level.
Any two means underscored by the same line are not significantly different.

Group I — 5 subjects 60%+ average, failed sixth
Group II — 5 subjects 60%+ average, passed sixth
Group III — 6 subjects 60%+ average, wrote 6 to 8 exams
Group IV — 5 subjects 60% average, wrote 9 or more - average 11
Group V — Mature students - non matriculants

For convenience all the CQT means and standard deviations have been compiled in one table, Table VII, which makes for easy comparison of group performance on the different CQT subtests and total tests.

See Table VII - page 15

Table VIII indicates that the University of Lethbridge first year males in this study had higher mean scores than females on the CQT total and on all the subtests except Verbal. These results are similar to those found when the CQT was normed on 14,441 males and 8,556 females in the U.S.A. in the fall of 1956.

See Table VIII - page 16

In the following tables comparing the GPA of the various groups it will be noted that the N in some groups was reduced due to students who dropped out of university in the Spring semester.

While Table IX shows in the analysis of variance summary that there was no significance among the groups on fall GPA, it is particularly interesting to note that the mature student, Group V, which had the lowest CQT total mean score, had the highest GPA, 2.54. Group III which earned the highest CQT total mean score had the second highest GPA 2.40, and Group I with 1.91 GPA had the lowest. Because some of the students were not present for the second semester the sample size for GPA analysis was unavoidably reduced.

See Table IX - page 17

TABLE VII

COLLEGE QUALIFICATION TEST RESULTS

THE MEANS AND STANDARD DEVIATIONS FOR THE FIVE GROUPS
AND THE TOTAL GROUP ON THE SUBTESTS,
AND TOTAL CQT, 1967-68

	N	V(verbal) $\bar{X}$	SD	N(math) $\bar{X}$	SD	I Tot $\bar{X}$	SD	I Sc $\bar{X}$	SD	I ss $\bar{X}$	SD	C.Q.T. $\bar{X}$	SD
Group I	20	51.20	11.57	38.75	7.25	51.30	7.26	27.85	4.50	23.45	3.94	141.25	17.37
Group II	22	52.45	10.30	40.95	4.90	55.09	7.02	29.77	4.08	25.32	4.19	148.50	19.37
Group III	22	57.36	10.21	45.50	3.71	57.86	6.34	31.59	3.16	26.27	4.22	160.73	16.80
Group IV	25	49.04	9.25	39.00	5.23	52.80	7.08	28.64	4.17	24.16	3.94	140.84	15.73
Group V	18	60.78	9.86	28.78	8.06	50.72	8.50	27.17	4.18	23.60	5.59	140.28	19.12
Group VI	107	53.83	10.89	38.97	7.80	53.68	7.54	29.08	4.24	24.60	4.41	146.49	19.00

Group I 5 subjects 60%+ average failed sixth
Group II 5 subjects 60%+ average passed sixth
Group III 6 subjects 60%+ average wrote 6 to 8 exams
Group IV 5 subjects 60% average wrote 9 or more (average 11)
Group V Mature Students - non matriculant
Group VI Total Group

TABLE VIII

COLLEGE QUALIFICATION TEST RESULTS

THE MEANS AND STANDARD DEVIATIONS OF THE MALES, FEMALES AND TOTAL GROUP ON THE SUBTESTS, AND TOTAL C.Q.T., 1967-68

	N	V(verbal) $\bar{X}$	V(verbal) SD	N(math) $\bar{X}$	N(math) SD	I Tot $\bar{X}$	I Tot SD	I Sc $\bar{X}$	I Sc SD	I ss $\bar{X}$	I ss SD	C.Q.T. $\bar{X}$	C.Q.T. SD
Males	60	53.00	10.90	41.42	6.47	55.88	6.91	30.18	3.92	25.70	4.38	150.30	18.23
Females	47	54.52	11.07	36.83	8.08	51.13	7.80	27.80	4.43	23.33	4.27	142.48	19.73
Total Sample	107	53.83	10.89	38.97	7.80	53.68	7.54	29.08	4.24	24.60	4.41	146.49	19.00

TABLE IX

A COMPARISON OF THE FIVE GROUPS
ON THE 1967 FALL GPA MEANS

ANALYSIS OF VARIANCE SUMMARY

	df	Sum of Squares	Mean Square	F-ratio	P
Between Groups	4	5.16	1.29	2.42	N.S.*
Within Groups	83	44.28	0.53		
Total	87	49.44			

* Not significant

MEANS AND STANDARD DEVIATION

Group	I	II	III	IV	V
Sample Size	16	16	21	21	14
Mean	1.91	2.15	2.40	1.95	2.54
Standard Deviation	.58	.86	.71	.67	.84

Group I	5 subjects 60%+ average, failed sixth
Group II	5 subjects 60%+ average, passed sixth
Group III	6 subjects 60%+ average, write 6 to 8 exams
Group IV	5 subjects 60% average, wrote 9 or more - average 11
Group V	Mature Students - non matriculant

The analysis of variance summary for the spring GPA reveals that there was no significant difference among the groups. The group means show that Group III with 2.38 GPA had the highest mean GPA, while Group V, the mature students, with 2.32 was a close second. Once again Group I had the lowest mean GPA with 1.89, but as stated previously there was no significant difference among the group means.

TABLE X

A COMPARISON OF THE FIVE GROUPS
ON THE 1968 SPRING GPA MEANS

ANALYSIS OF VARIANCE SUMMARY

	df	Sum of Squares	Mean Square	F-ratio	P
Between Groups	4	2.99	0.75	1.25	N.S.*
Within Groups	83	49.67	0.60		
Total	87	52.66			

* not significant

MEANS AND STANDARD DEVIATIONS

Group	I	II	III	IV	V
Sample Size	16	16	21	21	14
Mean	1.89	2.26	2.38	2.03	2.32
Standard Deviation	.55	.75	.73	.68	1.14

Group I — 5 subjects 60%+ average, failed sixth
Group II — 5 subjects 60%+ average, passed sixth
Group III — 6 subjects 60%+ average, wrote 6 to 8 exams
Group IV — 5 subjects 60% average, wrote 9 or more - average 11
Group V — Mature Students - non matriculant

The accumulative GPA analysis of variance summary indicates that there was a significant difference among the groups at the .05 level. It is especially interesting to note that Group V, the mature students, had the highest accumulative mean GPA 2.47, and while Groups V was not significantly different from Groups II and III, it was significantly different from Groups I and IV as shown in the Duncan Multiple Range Test.

See Table XI - page 20

For convenience in making comparison for each group on each semester GPA and the accumulative GPA, the means and standard deviations have been compiled in one table, Table XII.

See Table XII - page 21

When the total group was divided by sex and their GPA calculated for each term as presented in Table XIII, it was noted that for each semester and for the accumulative GPA, the females performed higher than the males. Also the males were below the mean GPA for the total group in both semesters and for the accumulative GPA.

See Table XIII - page 22

Table XIV presents the GPA correlations between semesters and each semester with the accumulative GPA. It was noted that Group IV, "the persisters", had the highest consistent correlation, with Group V, the mature students, second. Group III had one of the lowest correlations between fall and spring semester GPA and the highest correlation between spring semester and accumulative GPA. It could be that this group had more difficulty adjusting to university during the fall semester.

See Table XIV -page 23

TABLE XI

A COMPARISON OF THE FIVE GROUPS
ON THE ACCUMULATIVE GPA MEANS FOR 1967-68

ANALYSIS OF VARIANCE SUMMARY

	df	sum of Squares	Mean Square	F-ratio	P
Between Groups	4	3.94	0.99	2.05	.05*
Within Groups	83	39.82	0.48		
Total	87	43.76			

* significant at the .05 level

MEANS AND STANDARD DEVIATION

Group	I	II	III	IV	V
Sample Size	16	16	21	21	14
Mean	1.90	2.18	2.37	1.99	2.47
Standard Deviation	.50	.76	.63	.67	.89

DUNCAN MULTIPLE RANGE TEST

Group	I	IV	II	III	V
Means ranked by size	1.90	1.99	2.18	2.37	2.47

Note: Any two means not underscored by the same line are significantly different at the .05 level
Any two means underscored by the same line are not significantly different.

Group I	5 subjects 60%+ average, failed sixth
Group II	5 subjects 60%+ average, passed sixth
Group III	6 subjects 60%+ average, wrote 6 to 8 exams
Group IV	5 subjects 60% average, wrote 9 or more - average 11
Group V	Mature students - non matriculants

TABLE XII

THE MEANS AND STANDARD DEVIATIONS OF THE FIVE GROUPS OF FRESHMEN AND THE TOTAL GROUP ON FALL, SPRING, AND ACCUMULATIVE G. P. A., 1967-68

	N	Fall GPA		Spring GPA		Accumulative GPA	
		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Group I	16	1.91	.58	1.89	.55	1.90	.50
Group II	16	2.15	.86	2.26	.75	2.18	.76
Group III	21	2.40	.71	2.38	.73	2.37	.63
Group IV	21	1.95	.67	2.03	.68	1.99	.67
Group V	14	2.54	.84	2.32	1.14	2.47	.89
Group VI	88	2.18	.75	2.18	.78	2.18	.71

Group I 5 subjects 60%+ average failed sixth
Group II 5 subjects 60%+ average passed sixth
Group III 6 subjects 60%+ average wrote 6 to 8 exams
Group IV 5 subjects 60% average wrote 9 or more (average 11)
Group V Mature Students - non matriculant
Group VI Total Group 88 students

* The original total group of 107 first semester was reduced to 88 second semester due to students withdrawing from university.

TABLE XIII

THE MEANS AND STANDARD DEVIATIONS OF THE FEMALES, MALES, AND TOTAL GROUP ON FALL, SPRING, AND ACCUMULATIVE G. P. A., 1967-68

	N	Fall GPA $\bar{X}$	Fall GPA SD	Spring GPA $\bar{X}$	Spring GPA SD	Accumulative GPA $\bar{X}$	Accumulative GPA SD
Females	41	2.29	.73	2.25	.78	2.28	.69
Males	47	2.08	.77	2.11	.78	2.08	.72
Total	88	2.18	.75	2.18	.78	2.18	.71

TABLE XIV

THE CORRELATIONS FOR THE FIVE GROUPS AND TOTAL GROUP ON FALL vs SPRING, FALL vs ACCUMULATIVE, AND SPRING vs ACCUMULATIVE G. P. A., 1967-68

	N	Fall vs Spring	Fall vs Accum.	Spring vs Accum.
Group I	16	.58*	.90**	.87**
Group II	16	.73**	.93**	.93**
Group III	21	.61**	.88**	.89**
Group IV	21	.92**	.98**	.98**
Group V	14	.84**	.97**	.95**
Group VI (Total)	88	.75**	.94**	.93**

Group I — 5 subjects 60%+ average failed sixth
Group II — 5 subjects 60%+ average passed sixth
Group III — 6 subjects 60%+ average wrote 6 to 8 exams
Group IV — 5 subjects 60% average wrote 9 or more (average 11)
Group V — Mature Students - non matriculant
Group VI — Total Group

* Significant at .05 Level
** Significant at .01 Level

Analysis of the courses taken by mature students in Table XV immediately revealed the popularity of the Arts courses. English, of course, was a required course for all freshmen. Psychology, history, philosophy, and sociology proved the most popular of the elective type courses.

It was interesting to note that of the eighteen mature students only two took mathematics and none took physics and chemistry. This is understandable when one realizes that most mature students lacked the high school prerequisite to take mathematics and science courses and are not interested enough in these subjects to spend the time taking the necessary prerequisites.

See Table XV - page 25

This concludesthe analysis of data for this study.

TABLE XV

ANALYSIS OF COURSES TAKEN BY MATURE STUDENT GROUP Fall 1967

Student	Eng	Psy	Hist	Phil	Soc	Pol. Sc	Mus	Art	Math	Zoo	Bus	Chem	Econ	Phys	Bot	Geog
AA	1	1	1			1	1									
AB	1	1	1	1												1
AC	1		1						1		1		1			
AD	1															
AE	1	1	1		1	1										
AF	1	1			1		2									
AG			1	1	1	1										
AH			1													
AI	1	1	1					1			1		1			
AJ	1	1	1	1						1						
AK	1	1				1	1	1								
AL	1	1		1	1								1			
AM		1														
AN	1	1	1	1	1											
AO	1	1	1	1	1											
AP					1											
AQ	1	1	1	1												
AR	1	1		1					1					1		
Total	15	13	11	8	7	4	4	2	2	1	2	0	3	1	0	1

N = 18

SUMMARY AND IMPLICATIONS

This "preliminary" or pilot study" done with regularly admitted and specially admitted "mature students" at the University of Lethbridge during its first year of operation, 1967-68, reveals some interesting anomalies.

Analysis of variance summaries on all of the CQT subtests and total test showed that there were significant differences among the groups on all of the subtests except one which was Social Studies. There was also significant difference among the groups on CQT total test (an aggregate of all the subtests).

The data showed in Table VII that when the mature students were compared on the CQT with the other four groups, regularly admitted freshman students, the mature students had the lowest mean score on four of the five CQT subtests. They were highest on one subtest, the verbal, and had the lowest mean on the CQT total score. Nevertheless, these same students had the highest Fall GPA, the second highest Spring GPA, and the highest Accumulative GPA of the five groups. (Table XII) This was quite an impressive performance when one considers the superior performance of Group III (the group which passed 6 senior matriculation subjects). It seems that the mature student's higher GPA was due to their superior maturity and motivation.

While the sample is too small to make broad generalizations, nevertheless, one cannot help speculating as to whether the CQT, or for that matter any general achievement test can adequately predict the success of mature students with university work, particularly if the students enroll in Arts courses and keep away from the sciences, as nearly all the students in

this study did. It seems that maturity and motivation more than adequately compensate for an average performance on a general educational achievement test - a measure of past educational experience.

As some mature students had not taken Grade XII subjects, their success in this study would appear to support the conclusions of a study done by Cook (1962). Cook studied 1000 men and 300 women in the freshman class in Indiana University and concluded "the study of particular courses in high school has little relationship to college grades (in this article at least)".

In an earlier study, Cook (1961) compared the college performance of 2,425 freshmen students at Indiana University. Students with high school backgrounds in college preparatory work and non college preparatory work were indentified and their grades compared. Cook wrote: "It did not make a great deal of difference whether a student took a college preparatory course (with more mathematics, language, and science) or a non college preparatory course as far as grades earned in college were concerned."

Writing in the Measurement of Student Adjustment and Achievement edited by W.T. Donahue (1949), Travers stated: "Study after study has shown, however, that there is practically no relation between pattern of high school credits and success in college. In one extensive study it was found that, in distinct contrast to the operation of average high school work or intelligence test scores, the requirement for entrance of specified high school credits bar as many superior as inferior individuals and admits as many inferior as superior ones."

Travers continues: "Similarly the advantage of studying certain

subjects in high school as background for specific college courses seems to have been greatly over emphasized."

As long ago as 1931, Douglas wrote: "Apparently there is little relationship between the mastery of any particular subject and college success."

The success of mature students at the University of Lethbridge during 1967-68, would tend to support the views of the authors cited. It seems that, given a minimum native ability or intelligence, the crucial factor for success at university is motivation and not necessarily prior experience in certain subjects, particularly in the Arts courses. It should be pointed out, of course, that this conclusion would not probably prevail in the sciences and mathematics because of the recent radical change in the content taught at each grade level. It will be interesting to see if data from a study currently in progress with a larger sample of mature students (approximately 60) will have similar findings to those found in this pilot study.

One procedural factor which might have had some effect on the results of this study was the fact that students were tested after the semester commenced. This might have contributed to the low CQT score of mature students in particular. This procedural sequence was modified in the new study with all students being tested prior to the beginning of the semester.

Another interesting aspect of the results was the fact that although the females had a lower CQT total score than the men (Table VIII), the females had the highest GPA for each semester and the highest accumulative GPA (Table XIII). Like the mature students, the females had superior performance on the Verbal subtest of the CQT. It would seem that as far as the mature students and female students were concerned they had superior

motivation when compared with the other students (regularly admitted or male students). Because motivation seems to play such a vital role in the success of the two groups mentioned, a test of motivation was given to students participating in the new study conducted during 1968-69. It will be interesting to see if the Motivational Analysis Test contributes to our understanding of the success of mature and female students.

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